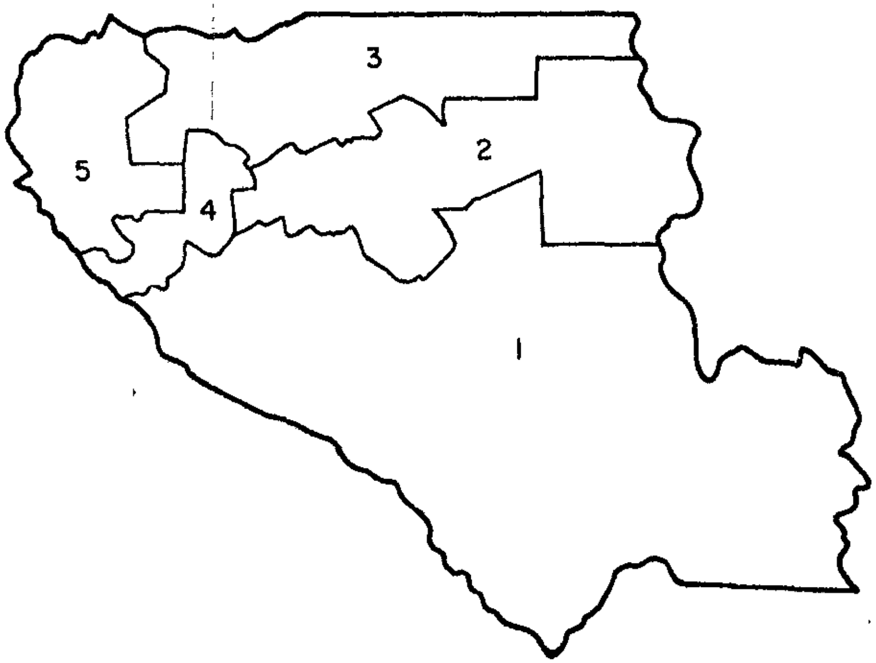
The Water Utility Enterprise

Final-June 1981

Santa Clara Valley Water District

TD
225
S3A3.W4
v.1981
c.2
LIBRARY



DIRECTORIAL DISTRICTS

Prepared by
William J. Hoeft, PE
and
Janet Line

Under direction of
Leo F. Cournoyer, PE
Division Engineer
Advanced Planning Division

David K. Gill, PE
Water Supply Manager

John T. O'Halloran
General Manager

District Board of Directors

Arthur T. Pfeiffer, Vice Chairman	District 1	James J. Lenihan, *Chairman*	*District* 5
Patrick T. Ferraro	District 2	Sig Sanchez	At Large
Robert Gross	District 3	Linda Peralta	At Large
Maurice E. Dullea	District 4		

TD225 S383 W4/1981 c.2

1929 50th Anniversary 1979
Santa Clara Valley Water District

5750 ALMADEN EXPRESSWAY
SAN JOSE, CALIFORNIA 95118
TELEPHONE (408) 265-2600

Rainfall in the 1979-80 water year was above average in Santa Clara County and provided sufficient runoff to fill all of the Districts reservoirs and bring groundwater to its highest levels since 1975. Local water combined with imported supplies met water needs throughout the District for the year. Moreover, the year-end carryover storage in reservoirs and groundwater subbasins in conjunction with current rainfall and imported water indicate that water supplies will be adequate to meet the District's water needs for 1980-81.

A progress report on the San Felipe Division of the Federal Central Valley Project as of the beginning of June, 1981, shows the construction of the Pacheco Tunnel ahead of schedule with the tunnel excavation just completed. Bids on the Santa Clara Tunnel are scheduled to be received by June 30, 1981 by the Bureau.

Regarding the District's In-County Distribution System, contracts for construction of the Almaden Valley Pipeline II have been awarded with construction of the first phase of the pipeline well underway. Design efforts are currently in progress for additional phases of the Cross Valley Pipeline and predesign studies for the expansion of Rinconada Water Treatment Plant have been completed.

Looking at the projected finances for next year, the District will incur increased costs for South Bay Aqueduct water and for the construction of its in-county facilities. In order to meet these increased costs and to provide sufficient operating income, it will be necessary to increase water rates and tax revenues for next year.

On April 14, 1981, following a public hearing and after meetings with the local retail water agencies, the Water Commission and the Agricultural Water Advisory Committee, the District Board of Directors adopted a revised schedule of water rates and tax revenues for fiscal year 1981-82 which are summarized at the end of this report. The new groundwater charges and the equivalent basic user rates are $70 per acre-foot for municipal and industrial water and $17.50 per acre-foot for agricultural water in Zones W-2, W-3.1, W-3.2, W-3.3 and W-3.5. No groundwater charges will be levied in Zones W-5 and W-6 for next year.

John T. O'Halloran
General Manager

AN AFFIRMATIVE ACTION EMPLOYER

This is the tenth annual report on the status of the Santa Clara Valley Water District's Water Utility Enterprise. The purpose of this report is to provide information on the following items:

- Current and future water requirements of Santa Clara County
- Current and future water supply available to meet those requirements
- Future capital improvement needs
- Future financial needs of the Water Utility Enterprise including expenditures and a means of financing them
- Water charges to be levied in any zone or zones of the District for the next fiscal year

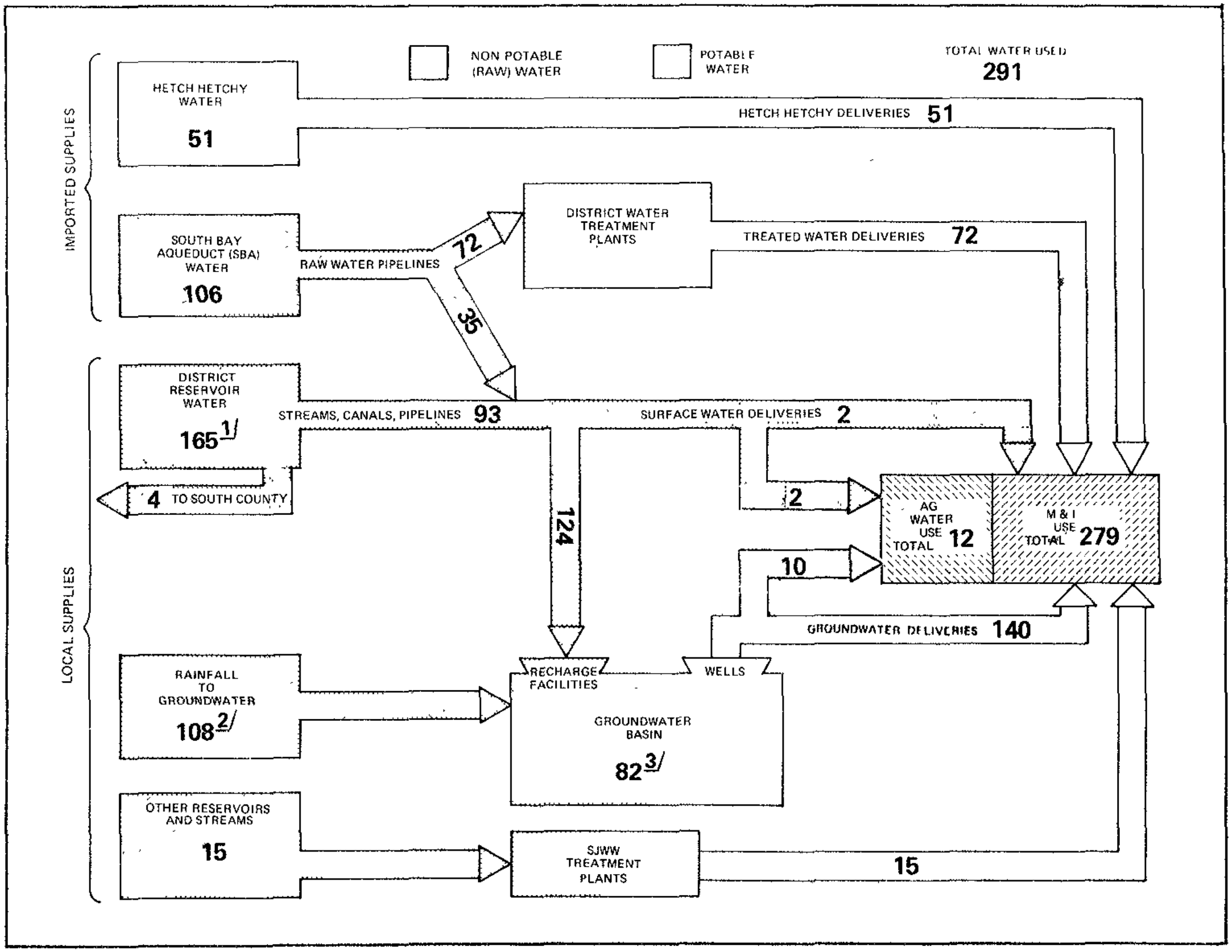
1979-80 Water Picture...

Rainfall in Santa Clara County during 1979-80 was considerably above average; all the District's reservoirs filled to capacity and depth to groundwater approached pre-drought levels.

During this period, total water use in the North County was very comparable to last year's amounts with M&I water use up about 2% and agricultural water use down about 14% from 1978-79.

The 1979-80 water supply and water use for North Santa Clara County is summarized in the diagram at the right. As shown, the total water use in North Santa Clara County during 1979-80 was 291,000 acre-feet while the annual supply amounted to 441,000 acre-feet. The difference of 150,000 acre-feet was put into reservoir and groundwater basin storage to meet future needs.

WATER SUPPLY AND USE
NORTH SANTA CLARA COUNTY
1979-80
(All Values in 1,000 Acre-Feet)


NON POTABLE (RAW) WATER
POTABLE WATER
TOTAL WATER USED 291
IMPORTED SUPPLIES
HETCH HETCHY WATER 51
HETCH HETCHY DELIVERIES 51
SOUTH BAY AQUEDUCT (SBA) WATER 106
RAW WATER PIPELINES
72
35
DISTRICT WATER TREATMENT PLANTS
TREATED WATER DELIVERIES 72
LOCAL SUPPLIES
DISTRICT RESERVOIR WATER 165 1/
STREAMS, CANALS, PIPELINES 93
SURFACE WATER DELIVERIES 2
4 TO SOUTH COUNTY
124
2
10
AG WATER USE TOTAL 12
M & I USE TOTAL 279
GROUNDWATER DELIVERIES 140
RECHARGE FACILITIES
WELLS
RAINFALL TO GROUNDWATER 108 2/
GROUNDWATER BASIN 82 3/
OTHER RESERVOIRS AND STREAMS 15
SJWW TREATMENT PLANTS
15

1. Includes 68,000 acre-feet added to reservoir storage.
2. Includes unmeasurable subsurface inflow.
3. 82,000 acre-feet was added to storage in the Santa Clara Valley Groundwater Sub Basin.

Water Use...

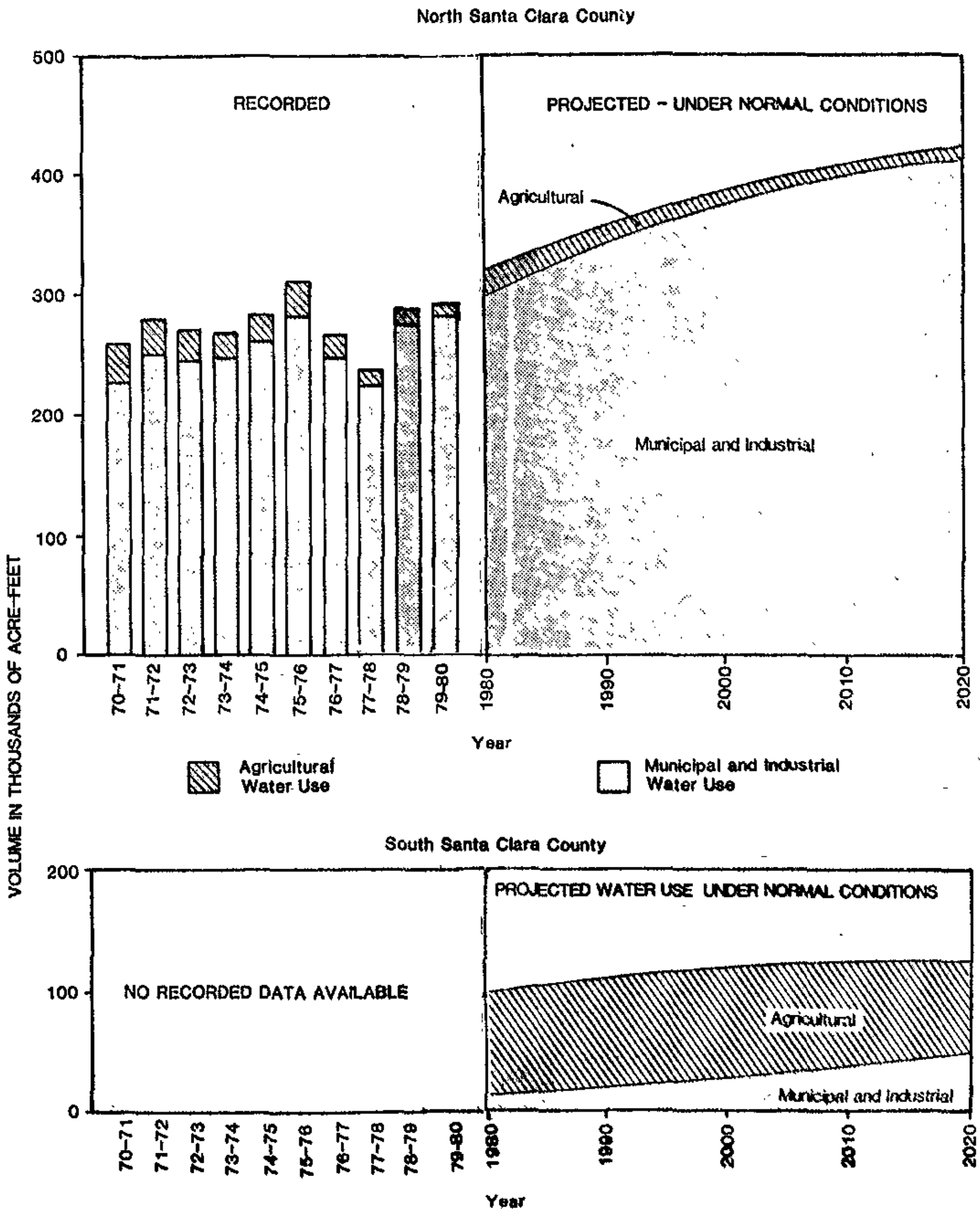
Water use in Santa Clara County is categorized as either agricultural or municipal and industrial. Recorded North County water use for the period 1970-71 through 1979-80 is shown to the right.

Projections of future water use in North Santa Clara County as shown to the right indicate a long-term average increase through 1995 when the rate of increase will begin to gradually decrease. Although agricultural requirements are gradually decreasing, the total water demand is expected to reach 420,000 acre-feet per year in 2020 due to increasing industrial and residential requirements.

Water use in South Santa Clara County, the area south of Metcalf Road, has been primarily agricultural and has been met by available local supplies, mainly from groundwater pumping. In South Santa Clara County, it is anticipated that municipal and industrial water requirements will continue to increase while agricultural requirements will decrease. Total annual water use in South Santa Clara County is projected to increase to about 125,000 acre-feet by 2020.

Presently, portions of Zone W-5 in the South County do not have a formal groundwater production measurement program. Thus, estimates of water use in South County have been primarily based on land use and can only be considered approximate.

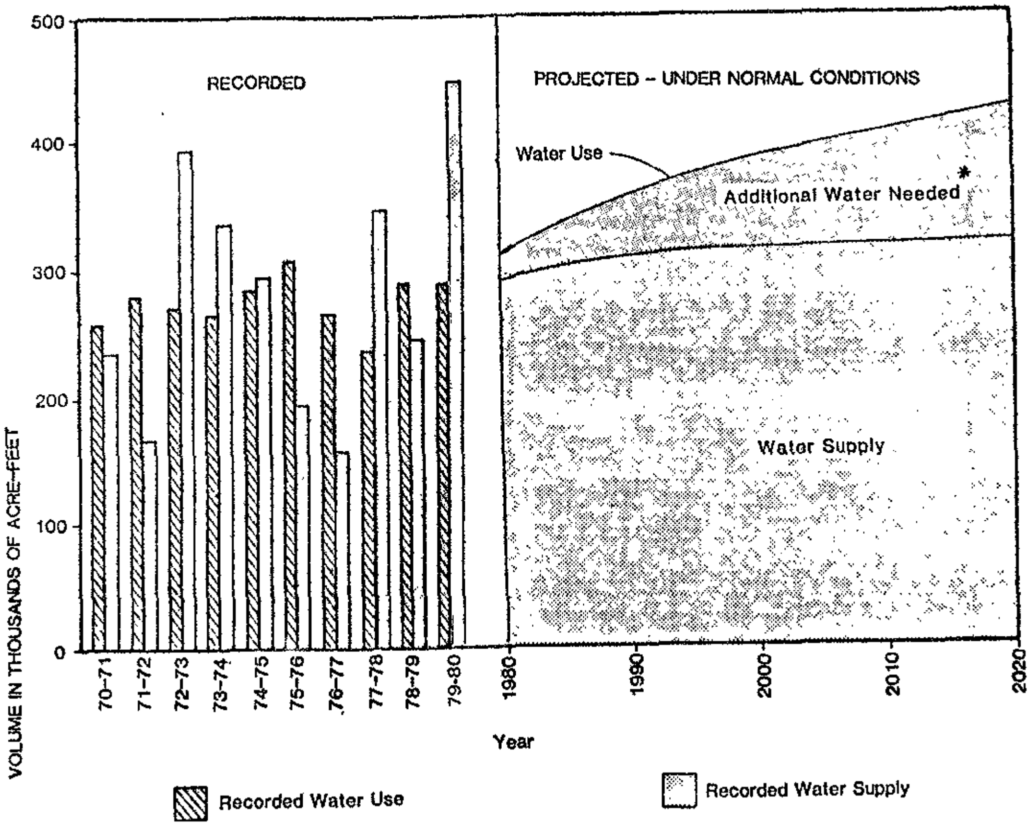
RECORDED AND PROJECTED WATER USE



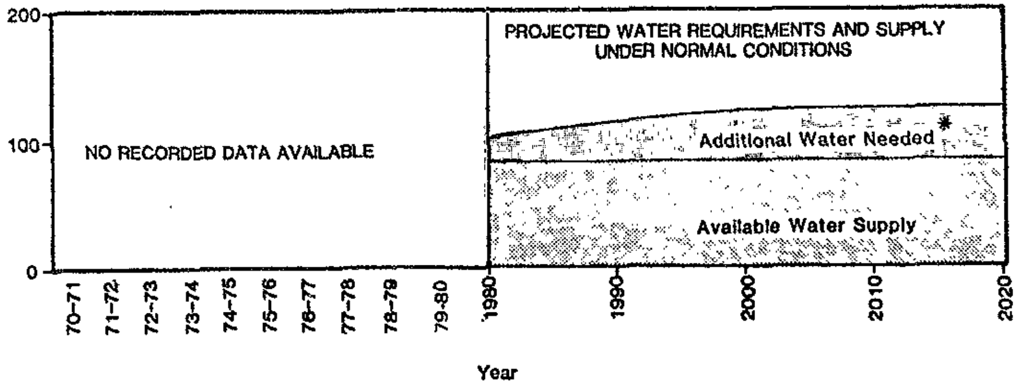
...and Water Supply

RECORDED WATER USE AND SUPPLY
AND
PROJECTED WATER REQUIREMENTS AND SUPPLY

North Santa Clara County



South Santa Clara County



Present sources of water supply in North Santa Clara County consist of locally conserved water and water imported from the Hetch Hetchy and South Bay Aqueducts. The annual water supply available in North Santa Clara County since 1970-71 is shown to the left.

In 1979-80, local water supply in the County was greater than average. During this period, water was added to reserves in the groundwater subbasins and surface reservoirs to meet future water needs.

As shown in the graphs on the left, projected average water use is expected to exceed normal available water supplies on a yearly basis. As a result, the groundwater subbasins in the County will function in a water-deficit condition until supplemental water is available from the San Felipe Division in the late 1980's. In the meantime, it may become necessary to intensify the District's local water savings program to avoid excessive mining of the groundwater subbasins until the new supply of water is available.

---

*Additional water needed to be supplied from the San Felipe Division, Central Valley Project

In-County Water Distribution System...

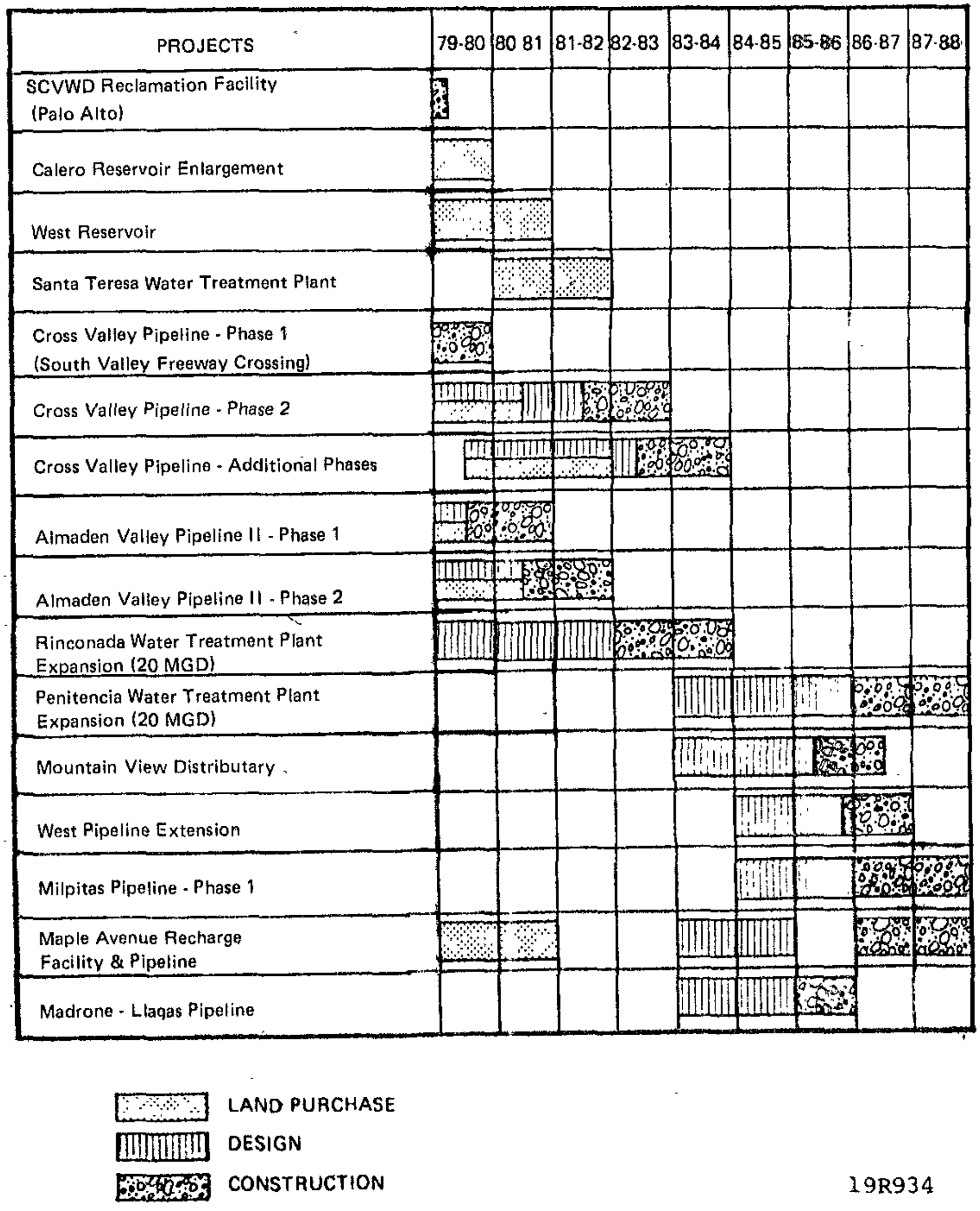
To adequately meet the projected water needs of the County, it is necessary to expand the In-County Distribution System by constructing several major new facilities. Since publication of its Master Plan, the District has updated its projected new facility construction program. Construction of the East Reservoir, the West Reservoir and the Parallel West Pipeline have been postponed from Stage I to Stage II. Also as part of the Stage II facilities, the Santa Teresa Water Treatment Plant has been added as an alternative to the Coyote Water Treatment Plant. The Snell Avenue Pipeline, the Calero Pipeline and Calero Pumping/Generation Plant have also been added in conjunction with the Santa Teresa Water Treatment Plant alternative as part of the Stage II facilities.

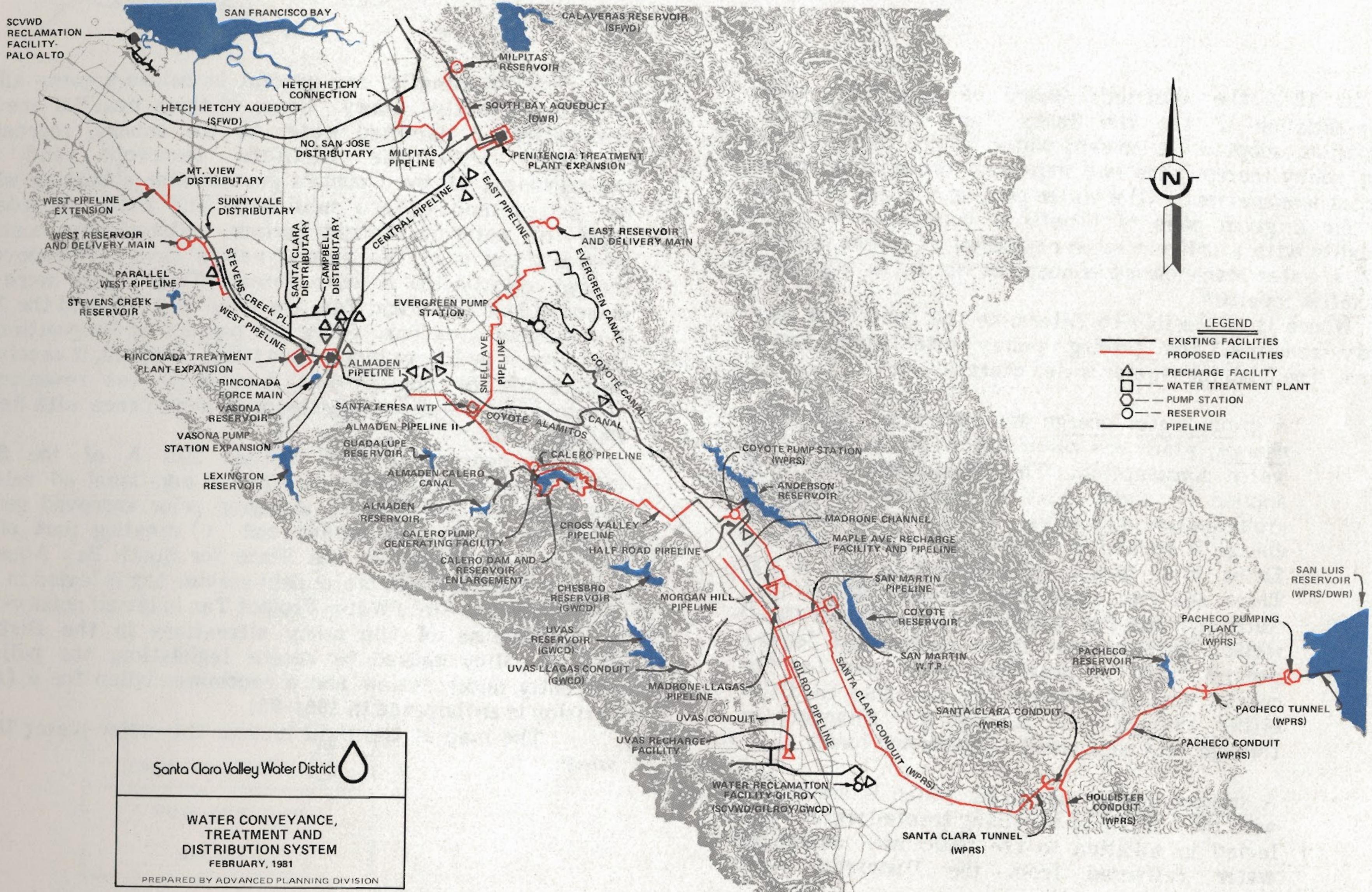
The table to the right shows the current schedule for land acquisition, project planning and design and construction of the proposed Stage I facilities through 1987-88.

The schedule does not include the construction of an enlarged Calero Reservoir, possible corrective measures for Stevens Creek Dam, or potential modifications to the potable water treatment plants which may be required by as yet undefined future water quality requirements nor are the costs associated with these items included in the expenditure forecasts in this report.

The map on the following page shows the location of the major existing facilities of the In-County Distribution System, the Stage I facilities listed in the proposed construction schedule, and those facilities scheduled for constuction in Stage II and Stage III as outlined in the Master Plan and modified as mentioned above.

PROJECTED NEW FACILITY CONSTRUCTION PROGRAM (Stage I)
FOR THE WATER UTILITY ENTERPRISE
1979-80 THROUGH 1987-88





Santa Clara Valley Water District

WATER CONVEYANCE, TREATMENT AND DISTRIBUTION SYSTEM

FEBRUARY, 1981

PREPARED BY ADVANCED PLANNING DIVISION

Sources of Revenue...

In 1971 the District's Board of Directors, upon recommendation of the the Santa Clara County Water Commission, adopted the current water pricing policy. This pricing policy incorporates two important concepts in water resources management: (1) a water pooling concept in which water for a given zone of benefit is considered a single commodity with a uniform value regardless of source or cost and (2) a water management concept in which the user pays for benefits received.

Where it is possible to determine the benefits a user directly receives, the pricing policy established water charges. The District's major water charges are:

- A groundwater charge and equivalent basic user charge, which are associated with the benefit of water consumption. The groundwater charge is applied to water that is extracted from the groundwater subbasins, while the basic user charge is applied to other water delivered within Zones W-2, W-3.1, W-3.2, W-3.3, and W-3.5. There are two rates, one for agricultural (Ag) water and one for municipal and industrial (M&I) water. Revenue from these charges pays for the general costs of providing water and for the capital costs of constructing in-county facilities either through "pay as you go" financing or through debt repayment of bonds and loans.

- A treated water surcharge, which is associated with the benefit of receiving treated water. It is levied in addition to the basic user charge on water delivered from the District's water treatment plants.

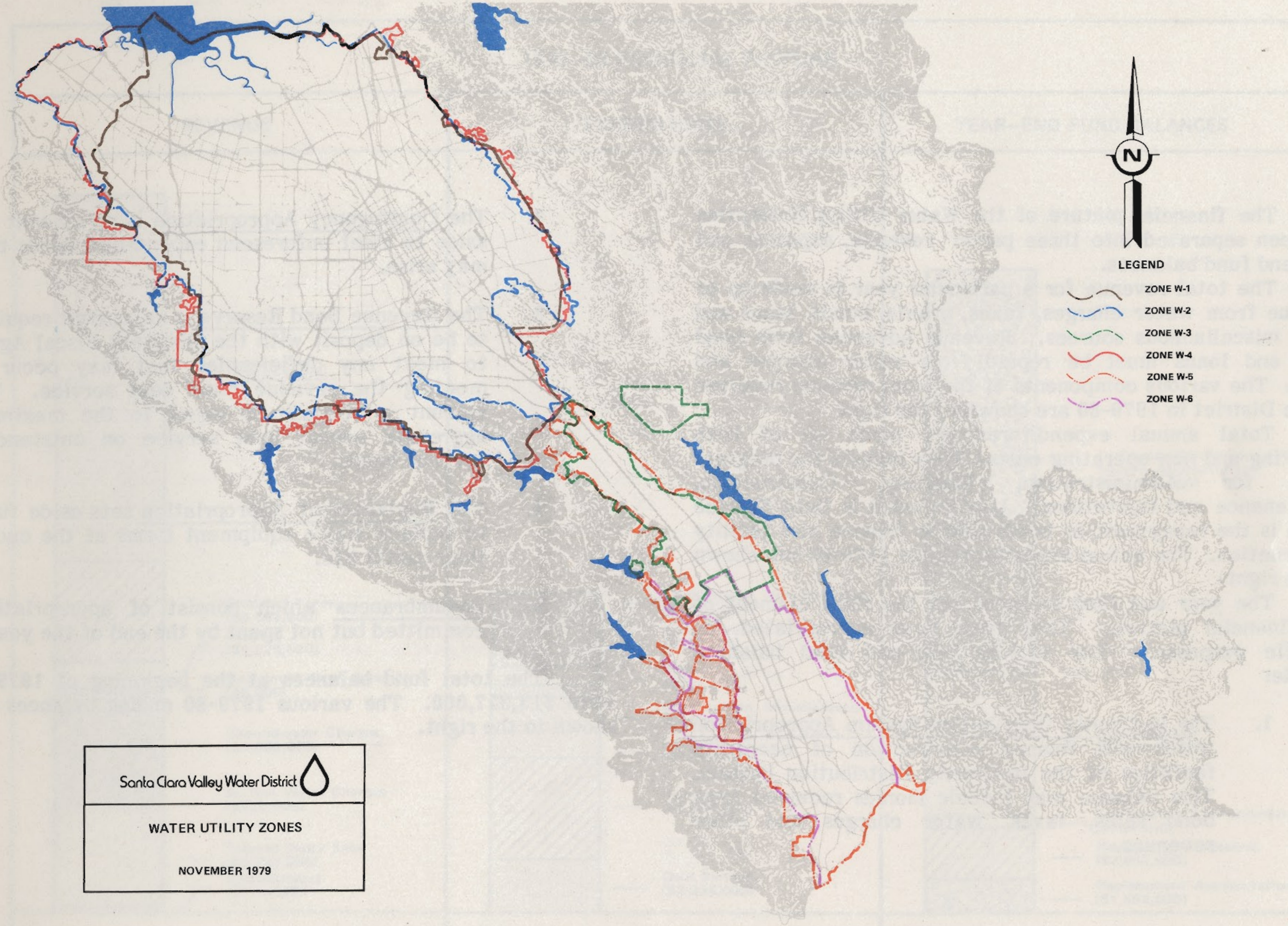
Several benefits are general in nature serving all or large areas of the county. Some of these benefits are the availability of imported water to the county, recreation associated with the District's reservoirs and the replenishment of the County's groundwater subbasins which has halted land surface subsidence and which provides a supply of water in drought periods. Historically, costs to provide benefits of this general nature have been recovered through countywide or zone taxes. These taxes were the countywide Water Fund Tax, the Zone W-3 Tax and the Zone W-4 Service Area Tax. Since the passage of Proposition 13, the District no longer levies such taxes. Instead, it receives a portion of the one percent countywide tax revenues as allocated by the County Assessor in accordance with Senate Bill 154.

In accordance with Article XIII A of the State Constitution, the District has levied additional ad valorem taxes for the purposes of a) paying prior approved general obligation bond debt service and b) meeting part of the contract obligations to the State for South Bay Aqueduct water. The District's major debt service tax is levied in Zone W-1, while the State Water Project Tax is levied county-wide.

Because of the many alterations in the District's pricing policy caused by recent legislation, the policy is currently under review and a recommendation for a formal revision is anticipated in 1981-82.

The map at the right locates the major Water Utility zones.

. . .Related to Costs of Providing Benefits



The Financial Picture...

The financial picture of the Water Utility Enterprise has been separated into three parts: revenue, expenses and year-end fund balances.

The total revenue for a particular year is made up of revenue from water charges, taxes, grants, bonds, loans and other miscellaneous sources. Revenue advanced from bond sales and loans must be repaid from water charges and taxes. The various components of the total revenue received by the District in 1979-80 are shown to the right.

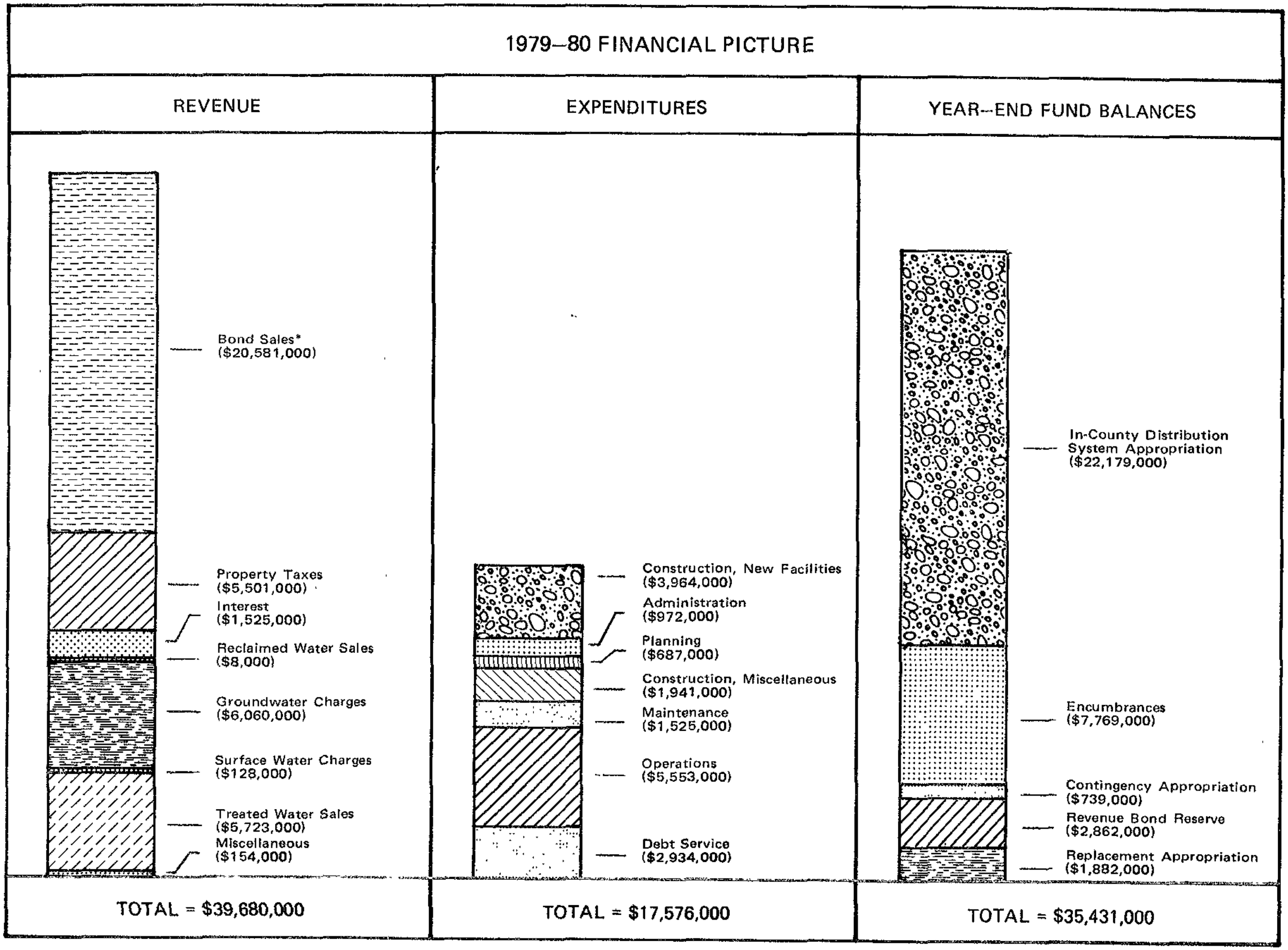
Total annual expenditures are made up of both operating and non-operating costs. They include the program costs for Administration, Planning, Construction, Maintenance and Operations. Also included is Debt Service which is the repayment of bonds sold to finance new facility construction. The actual expenditures for 1979-80 are shown to the right.

The year end fund balances are the third element of the financial picture. They have been appropriated for specific purposes. The various year-end fund balances include:

1. The In-County Distribution System Appropriation which will finance construction of necessary facilities of the In-County Distribution System. This balance may include monies received from bond sales, taxes, water charges and other revenues.
2. The Contingency Appropriation is an amount set aside to meet unforeseen expenditure needs that may arise.
3. The Revenue Bond Reserve is an amount required to be on deposit with the District's Fiscal Agent to meet any deficiencies that may occur in meeting the revenue bond debt service. The amount on deposit is equal to the maximum aggregate annual debt service on outstanding revenue bonds.
4. The Replacement Appropriation sets aside funds to replace major equipment items at the end of their useful life.
5. Encumbrances which consist of appropriations committed but not spent by the end of the year.

The total fund balances at the beginning of 1979-80 were $13,327,000. The various 1979-80 ending balances are shown to the right.

...of the Water Utility Enterprise



*Bond sale of $21,000,000 less $419,000 discount.

Financial Estimates...

Estimated revenue, expenditures and year-end appropriations for the current fiscal year are shown in the graph on the opposite page.

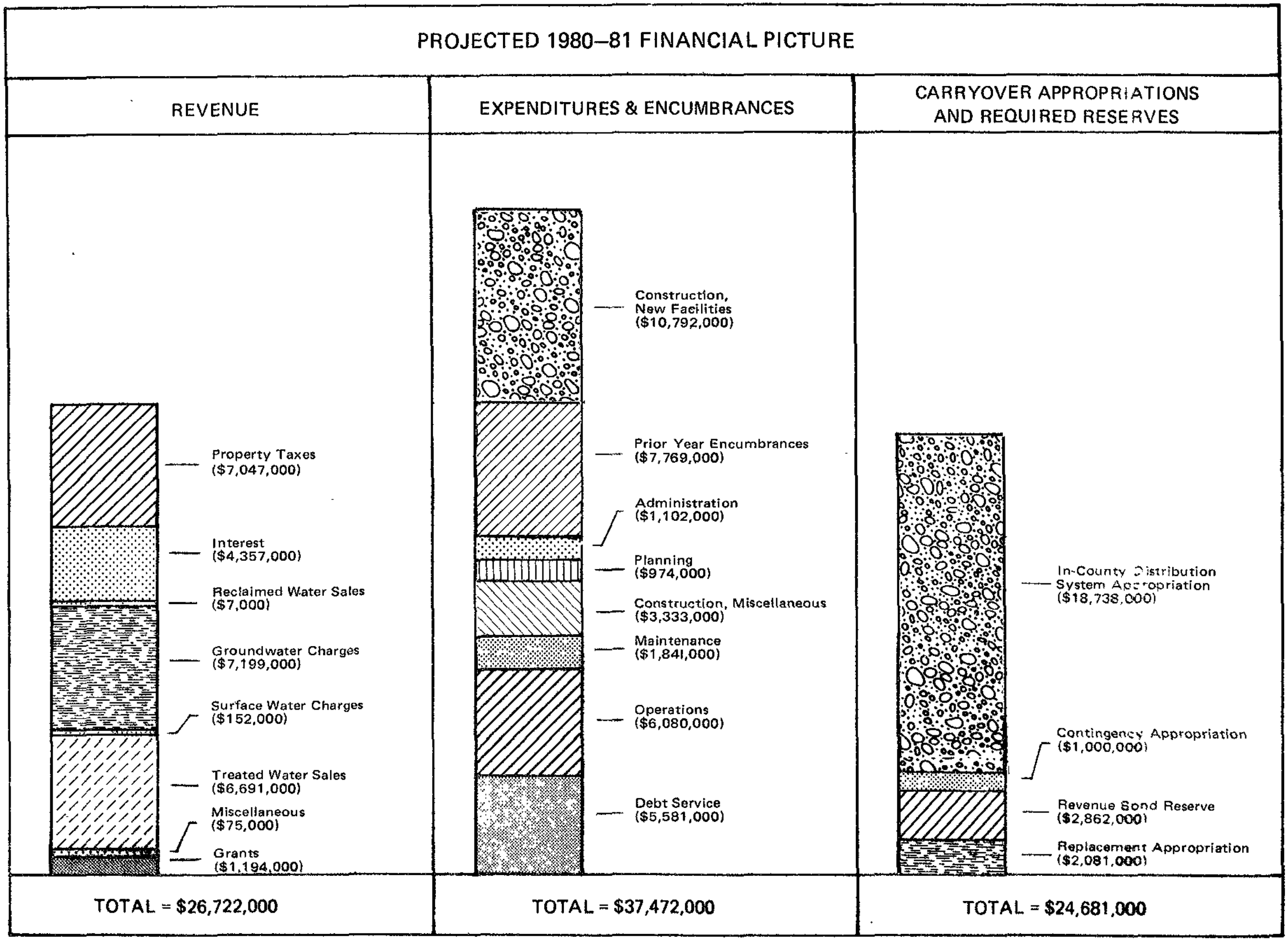
Revenue from groundwater charges and raw surface water sales is collected semiannually in the month following the period in which the water was used. Therefore, the 1980-81 revenue projections incorporate the collections for groundwater extractions and surface water deliveries made in the later half of 1979-80 based on groundwater charges and basic user rates of $44 per acre-foot for municipal and industrial (M&I) water and $11 per acre-foot for agricultural (Ag) water. The rates applicable to groundwater extractions and raw surface water deliveries made in the first half of 1980-81, which are due and payable in that year, and to treated water deliveries throughout the year are $54 per acre-foot for M&I water and $13.50 for Ag water. The treated water surcharge rate is $41 per acre-foot.

Estimated revenue from property taxes includes income from the one percent allocation ($2,684,000), from debt service taxes ($2,488,000) and from the State Water Project Tax ($1,875,000).

The estimated expenditures in 1980-81 are as shown on the opposite page. The major expenditures for 1980-81 are for construction and inspection of the second phase of the Almaden Valley Pipeline II ($7,500,000) which commenced in the spring of 1981. Additional new facility costs include the purchase of land for the Santa Teresa Water Treatment Plant ($1,500,000), the predesign of the Rinconada Water Treatment Plant Expansion and design of the second phase of Cross Valley Pipeline. The In-County Credit for Hetch Hetchy water purchases is estimated at $412,000.

While the District has been anticipating increases in SBA water costs, the State has recently revised its estimates of future costs with an overall increase of about 10% from last year's projected amounts. This has resulted in an increased cost to the District of over $1,000,000 in calendar year 1981 for SBA water. The State has further indicated that there will be as yet undetermined additional increases in the projected payments for SBA water to cover their increasing costs of power, bonds, and new facilities.

. . .for the Current Year (1980-81)


PROJECTED 1980–81 FINANCIAL PICTURE

Financial Projections...

Projected revenue for 1981-82 is shown on the opposite page. The projected revenue is based on ground-water charges and basic user rates for groundwater extractions and raw surface water deliveries made in the later half of 1980-81, which are due and payable in 1981-82, of $54 per acre-foot of M&I water and $13.50 per acre-foot of Ag water. The rates for groundwater extractions and raw surface water deliveries made in the first half of 1981-82, which are due and payable in that year, and to treated water deliveries made throughout 1981-82 are $70 per acre-foot for M&I water and $17.50 per acre-foot for Ag water. The treated water surcharge rate is $60 per acre-foot. This rate for the treated water surcharge is for the first year of a three year rate schedule. The rates for the next two years are $65 and $70 per acre foot respectively.

Projected revenue from taxes includes the one percent allocation ($2,950,000), the debt service taxes ($2,500,000) and the State Water Project Tax ($3,625,000). Revenue from the State Water Project Tax maintains the 1:2 tax reliance ratio of taxes to water charges that existed prior to passage of Proposition 13.

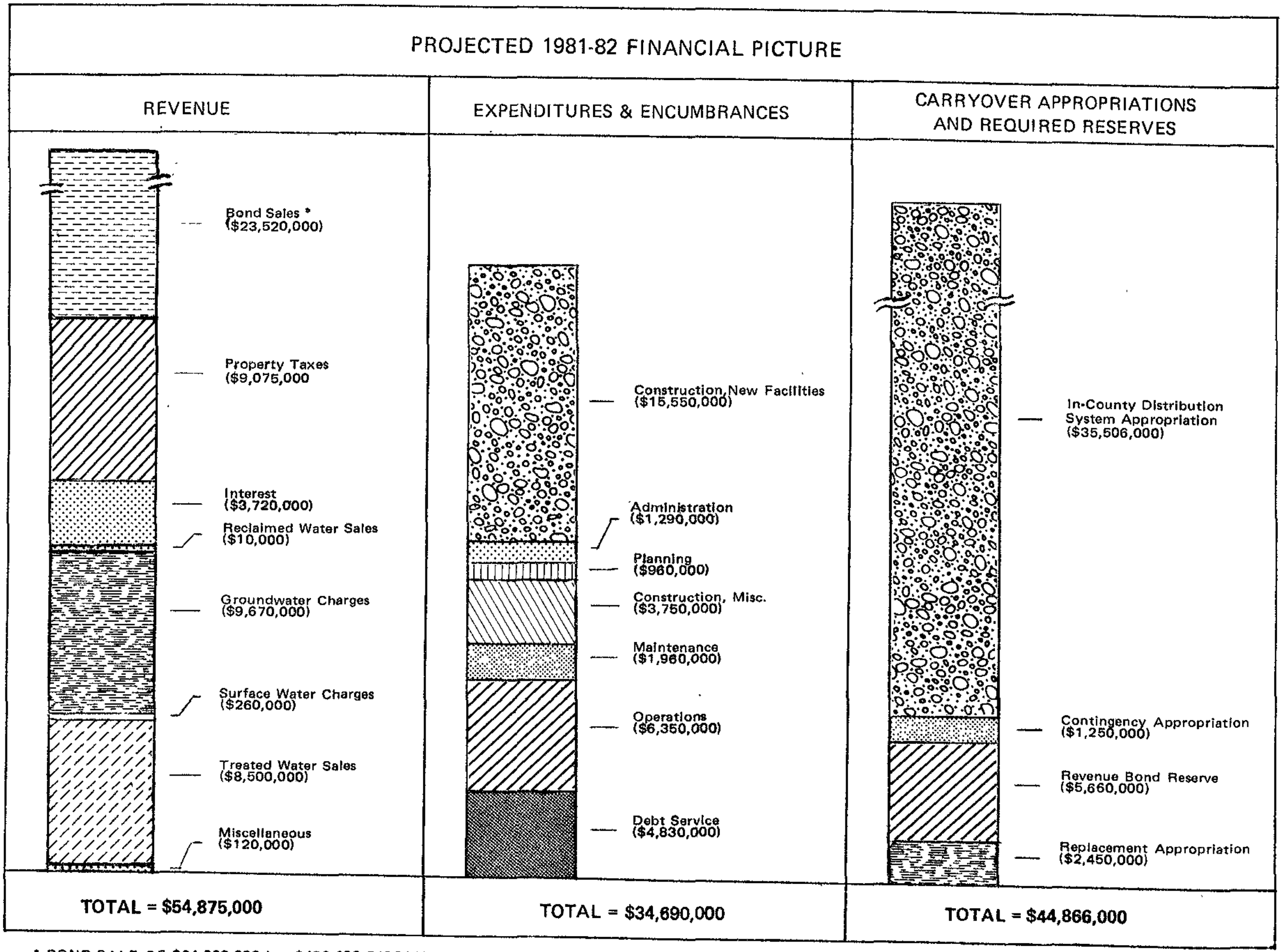
Also included in the 1981-82 estimated revenue are proceeds from a Series C Revenue Bond Sale. This sale is anticipated to be $24,000,000 with a 2% discount resulting in a net revenue of $23,520,000. The resulting annual debt service payment for the Series C bonds, assuming a 10% interest rate and a 20 year repayment term, would be about $2,820,000.

Expenditures projected for 1981-82 include costs for operations and maintenance of existing facilities including increased costs for SBA water and for design and construction of new facilities. The 1981-82 debt service for the Series A and Series B Revenue Bonds is estimated at $2,760,000.

Major new facility costs are for the construction of the second phase of the Cross Valley Pipeline ($10,886,000). Other new facility costs include design costs for Rinconada Water Treatment Plant ($1,100,000) and land purchase for the West Reservoir ($1,500,000). The In-County Credit for 1981-82 is projected at $450,000.

The major projects which will be funded from the In-County Distribution System Appropriations are expansion of the Rinconada Water Treatment Plant and Phase 3 of the Cross Valley Pipeline. The Revenue Bond Reserve reflects the estimated maximum annual payment for the Series A, B and C Revenue Bond debt service.

. . .for the Next Fiscal Year (1981-82)



* BOND SALE OF $24,000,000 less $480,000 DISCOUNT

Groundwater charges and equivalent basic user rates for the 1981-82 fiscal year in Zones W-2, W-3.1, W-3.2, W-3.3, and W-3.5 are summarized in the table below. No groundwater charges will be levied in Zones W-5 and W-6 nor will the District require reporting of water production of wells in Zones W-5 and W-6 next year. The countywide ad valorem State Water Project Tax will be levied to generate $3,625,000 in 1981-82.[1]

GROUNDWATER CHARGES[2]
AND BASIC USER RATES
IN ZONES W-2, W-3.1, W-3.2, W-3.3, AND W-3.5
FOR
FISCAL YEAR 1981-82

Agricultural Water (Ag.)	$17.50/Acre-Foot
Nonagricultural Water (M&I)	$70.00/Acre-Foot

---

[1] Adopted by the Board of Directors by Resolution 81-24 on April 14, 1981.
[2] Adopted by the Board of Directors by Resolution 81-26 on April 14, 1981.

WATER RATE COMPONENTS AND WATER CHARGES[1] FOR FISCAL YEAR 1981-82

Components	
COMPONENT	RATE
Basic User, Zones W-2, W-3.1, W-3.2, W-3.3, W-3.5	
Agricultural	$ 17.50/AF
Municipal and Industrial	70.00/AF
Basic User, Zones W-5, W-6	
Agricultural	0.00/AF
Municipal and Industrial	0.00/AF
Treated Water Surcharge	
Contract	60.00/AF
Noncontract	16.00/AF
Water Master	7.00/AF
Capital Cost	
Half Road Lateral System	2.75/AF
Power	
Half Road Lateral System	10.00/AF
Evergreen System	28.00/AF
Palo Alto Reclamation System	4.00/AF

Charges		
TYPE OF CHARGE	AG WATER	M & I WATER
Groundwater		
Zones W-2, W-3.1, W-3.2, W-3.3, W-3.5	$ 17.50/AF	$ 70.00/AF
Zones W-5, W-6	0.00/AF	0.00/AF
Surface Water		
Evergreen Deliveries	52.50/AF	105.00/AF
Half Road Deliveries	19.75/AF	19.75/AF
Other Zone W-3 Deliveries	7.00/AF	7.00/AF
All Other Deliveries	24.00/AF	76.50/AF
Minimum Charge	49.00/YR	49.00/YR
Stored Water	17.50/AF	70.00/AF
Treated Water		
Contract	-	130.00/AF
Noncontract	-	86.00/AF
Reclaimed Water		
Palo Alto*	28.50/AF	81.00/AF
Gilroy	20.00/AF	80.00/AF

* Under the Agreement with the City of Palo Alto, up to one million gallons per day is delivered for landscape irrigation use at a charge of $70.00/AF. In addition, up to 400,000 gallons per day is delivered at no charge for their in-plant use.

[1] Adopted by the Board of Directors on April 14, 1981 by Resolutions 81-25, 81-26 and 81-27.